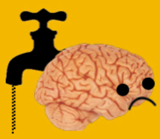
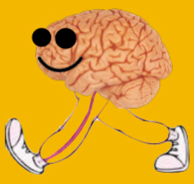
ANXIETY

What turns it on



What turns it off



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author of Habits of a Happy Brain
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ANXIETY

What turns it on

What turns it off



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I, Mammal: How to Make Peace With the Animal Urge for Social Power

How I Escaped from Political Correctness, and You Can Too

Dedicated to
the trailblazers
building power
over their inner mammal

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Introduction
Your natural threat detector and your natural sense of safety

Your brain is designed to promote survival, not to make you happy all the time. You are not consciously focused on survival, but your brain is inherited from ancestors who survived in a dangerous world. Beneath the words you use to talk to yourself, you have a brain that is constantly busy looking for ways to preserve and protect you.

Our brain defines survival in a quirky way, alas. It cares about the survival of your genes, and it relies on neural pathways built in youth. You can end up feeling like your survival is threatened a lot.

That feeling is the release of the chemical "cortisol." Your brain releases cortisol when it sees something bad for you, and it releases happy chemicals when it sees something good for you. Good-feeling chemicals motivate you to go toward a reward, and bad-feeling chemicals motivate you to retreat from harm.

Bad feelings have priority for the survival brain because a threat can kill you faster than missing out on a reward.

Cortisol does its job by making you feel so bad that you focus on making it stop. For example, when a hungry gazelle smells a lion, it runs, even though it

would rather be munching grass. Cortisol promotes survival by commanding your attention until you do something to make it stop.

Of course a gazelle must also fill its belly to survive. When it finds a way to meet a need, its brain rewards it with happy chemicals. Sometimes it fails in its quest for rewards. A gazelle may roam long distances without finding food. But it doesn't give up because it has learned from experience that a good feeling will replace the bad feeling when it finds a way to meet its needs.

A gazelle only worries about threats it can actually sense. The big human brain can imagine threats that are not physically present, and these internal constructions feel real enough to trigger cortisol. We can anticipate threats in time to protect ourselves. We don't get eaten by lions because we are good at predicting threats and taking preventive action. But we can end up with a lot of cortisol.

A gazelle doesn't panic when it smells a predator. It scans for the information it needs to choose the best escape route. Sometimes it doesn't run because it can tell the difference between a lion on the hunt and a lion that's just passing through. This analysis is done without words. The gazelle's sensory receptors send electricity into neural pathways built from its past experience. Those pathways link experience to past cortisol or past happy chemicals. By matching new inputs to old experience, a gazelle finds a course of action that feels good.

We humans are constantly doing that too. We make sense of the world by matching the patterns of new inputs to patterns wired in from past experience. We do it with features that gazelles don't have: a larger inventory of old patterns, and the ability to break new inputs down to smaller chunks and to turn each chunk around to find a good match. Thus we can respond to threats in new ways instead of just deciding which way to run. But all this complexity filters down to the same neurochemical choice to either go toward potential rewards or retreat from potential harm.

A gazelle does not look for permanent solutions to the predator problem. It may even share a waterhole with the lion who ate its child because it needs the water to survive. It just weighs immediate rewards against immediate threats.

The human brain is equipped to anticipate the future. We are constantly anticipating future rewards and future threats. Our ancestors survived by preventing threats instead of waiting to be bitten by them. But we anticipate being bitten a lot, and cortisol makes it feel like we are being bitten right now.

Cortisol creates a sense of urgency. It makes you feel like you will die if you don't do something to make it stop. And when you succeed at relieving it, your big brain is good at finding another potential threat to protect you from. It seems like you must eliminate every possible threat in the galaxy before you can feel safe.

"It's not my own safety I care about," you may say. You care about the greater good. You learn to think that with your verbal brain because it brings the social support and social importance that your inner mammal needs to feel safe. It's important to understand your inner mammal because it is the source of your threatened feelings.

How do gazelles feel safe in a dangerous world?

Let's focus on the realistic answer without romanticizing. Gazelles do not feel as safe as you might imagine. Their danger radar is always on. They seek safety in numbers, but that leaves them constantly worried about getting separated from the herd. And life in a herd is less harmonious than you might think. A gazelle endures a lot of conflict because leaving the herd triggers its cortisol.

Gazelles don't actually worry about death because death is an abstraction and the tiny gazelle cortex cannot process abstractions. Gazelles run from cortisol without fully comprehending their predicament. We humans understand the inevitability of our own demise, and our children's demise. This motivates us to make the most of every day, but it also motivates us to worry about every possible setback to the survival of our genes.

The chief source of comfort to the small gazelle brain is the presumption that its needs will be met. Of course this doesn't mean conscious presumption or philosophical comfort. It means that the act of meeting needs wires the gazelle brain to expect to meet its

needs again. A gazelle doesn't doubt its own ability to do what it takes to survive. This is the ultimate sense of safety that nature offers. You can build that sense of safety too.

A gazelle doesn't doubt its ability to do what it takes to survive.

Beneath your big cortex, you have brain structures that are common to all mammals. (Their names are not important here, but you have probably heard mention of the amygdala, hippocampus, hypothalamus, pituitary, and other structures collectively known as the limbic system). Your limbic system controls the brain chemicals that make you feel good and bad. It is constantly turning those chemicals on and off in ways that the verbal part of your brain is not aware of. If you want more happy chemicals and less cortisol, you have to get it from this "mammal brain."

Your verbal brain and your mammal brain are not on speaking terms because the mammal brain can't process abstractions. So when your mammal brain sounds the threat siren, your verbal brain often doesn't know why. The threat feels very real because the chemicals are real. You strive to explain it as urgently as a gazelle strives to locate the lion. Telling yourself

there is no lion doesn't help because your brain evolved to trust its own chemistry.

Your danger radar is built from your own past experience. You can change it by feeding your brain new experiences. A new pathway will build and you will have a new response. Your inner mammal can feel safe in the world as it is. This book shows you how to do this with step-by-step exercises. You will build a neural pathway that gives your inner mammal what it needs: the expectation that your needs will be met.

You may say you don't care about your own needs. Your verbal brain says that because it helps meet your needs. If you want your cortisol to stop, you have to make peace with your inner mammal. You can train it to trust your ability to meet your survival needs.

This may sound fake. Objections may flood your mind. Your old pathways are trying to protect you in the way they know how. But when you understand your circuits, you have power over them.

A gazelle's confidence in its ability is just a circuit built from experience. Each time its happy chemicals were released, neurons connected and wired it to expect the same good feeling in similar future circumstances. Each cortisol release wired the gazelle to expect harm in similar circumstances. The mammal brain constantly toggles between good and bad feelings to navigate toward rewards and away from threats. Toggling is natural!

Now imagine that you smell a lion but you can't tell where the danger is coming from. You must act fast

or your genes will be annihilated from the face of the earth. You are not descended from ancestors who failed to act. You are descended from individuals who collected information about threats and chose their next best step. Sometimes they were wrong, but they collected more information and took more steps. Each successful step builds the pathway that expects successful steps. You can keep stimulating your happy chemicals by focusing on your next step.

It's hard for a big brain to trigger the sense that its needs will be met because we anticipate threats so skillfully. This is why short cuts to feeling safe often tempt people. Putting food in your mouth, for example, stimulates the feeling of meeting a need for a moment. Drugs that mimic happy chemicals stimulate it for a moment. But the good feeling soon passes and your sense of threat returns. Perhaps it's worse because you realize that your short-term comfort brings long-term consequences. There is a better way. You can feel safe by building a neural pathway that trusts in your ability to meet needs and avoid harm.

Expecting to meet your needs is hard for a big brain because we anticipate threats so skillfully.

You cannot make yourself feel safe by imagining yourself on tropical beach. Probably you've tried.

Lying on a beach does not reassure your inner mammal that you are safe from the danger it perceives. This book shows you why your inner mammal turns on the danger alarm so you can find the "off" switch more easily. Part One you shows you how your unique individual neural network got built, and Part Two shows how to update it. You will design a safety circuit that fits the unique circumstances of your brain and your life.

We start with a view of what turns on an animal's threat detector because non-verbal creatures do not mask their impulses with fancy trimmings. A gazelle's cortisol is triggered when its blood sugar falls, and that motivates it to find food. When its belly is full and its nose is free of predators, a gazelle can still suffer plenty of cortisol. Gazelles get on each other's nerves, in fact. They obstruct each other's path to rewards, and a painful jab of the horns is often involved. A gazelle would rather wander off to greener pasture, but it's vulnerable to predators when it does. So the gazelle brain is constantly choosing between the cortisol of staying and the cortisol of leaving.

But a gazelle doesn't second-guess itself. A wrong move can kill it in an instant, but hesitation can kill it too. So it decides and it acts without too much scenario analysis. You may have heard that gazelles freeze sometime, and it's true. When they're flooded with cortisol and no option looks safe, their system slows down so extremely that they appear dead to the lion. This often saves their life because the lion turns to

communicate with its pride and the un-dead gazelle gets a chance to escape. The bottom line is still that action relieves cortisol.

The big human brain can see the flaw in every action. Once your cortisol turns on, it stays in your blood stream for two hours. It tells your cortex to gather threat data, and your cortex is good at finding what it looks for. You flood your mind with evidence of threat, which triggers more cortisol and two more hours of threat-seeking. A big brain can terrorize itself.

Cortisol stays in your blood stream for two hours, telling your cortex to gather threat data.

It's hard to believe that those threats are internal constructions rather than external facts. It's hard to believe that your response to the world is shaped by old pathways and new chemicals. Regardless of what you believe, the solution is to build a new pathway.

You can start building it right now, even before reading on. Think of a successful step you took to meet your needs today. Stop and do this three times a day for 45 days. You will build a new pathway that notices your successful steps. This may seem foolish because your failed steps seem so obvious. But that sense of failure is as artificial as this exercise, because your old

pathways are filtering your facts. Build a new filter and you see a new world.

So spend three minutes a day focusing on your successes, and if it feels dishonest, you have the rest of the day to think otherwise.

But what about….?

But what about my genes?
My disorder?
My trauma?
What about our society?
What about spirituality?
What about the real bad guys?

We hear a lot about these approaches to anxiety. You may be wondering how they fit the natural perspective offered here. You may even be annoyed that your favorite perspective is overlooked.

But you have probably tried these external approaches already. They divert your attention from internal strategies. The more you expect external solutions to work, the less you invest in internal ones. If your external solution fails, you may shift to another externalizing habit without noticing the internal solutions available to you. It would be great if your brain could get fixed like your car. But you are the master of your brain, so you might as well build your mastery.

It would be great if your brain could get fixed like your car. But you are the master of your brain, so you might as well build your mastery.

This may seem threatening at first, so you rush back to thoughts of your genes, your disorder, your trauma, our society, spirituality, and the real bad guys. But you have a choice. If you choose to invest energy in your internal navigation system, you will flourish.

We all face the same dilemma: how to move toward happy chemicals and away from cortisol with the pathways we have. You can alter the pathways in your brain if you feed it new experiences, repeatedly. That power is your most precious possession.

Part 1
Why Your Anxiety Turns On

1
The Alarm System We All Share

When you see a lizard basking in the sun, you may think it's enjoying nature's peace, but it is actually on high alert. It can get eaten alive in an instant when it's sunning, so it would rather hide under a rock. But it dies of hypothermia if it does that, and cortisol sounds the alarm when its body temperature falls. That motivates a reptile to go out in the sun, where it scans urgently for predators until it's warm enough to return to hiding. A reptile survives by running constantly from one threat to another.

Mammals survive by seeking safety in numbers. A herd is an extended threat detection system. You may sneer at the idea of running when the rest of the herd runs; but in the state of nature, a critter who refused to run until it saw the predator for itself would not have survived. Your brain is inherited from individuals whose cortisol got triggered when their group mates got triggered.

Cortisol is nature's emergency broadcast system. It is found in mammals, reptiles, fish, mollusks, amoeba, and even plants! Its core job is to communicate pain. If you touch a hot stove, cortisol motivates action that relieves pain before you even know what happened.

Neurons connect when cortisol flows, wiring you to turn on the cortisol more easily next time. When you see another hot stove, you anticipate pain and pull back without having to touch it. The bigger a creature's brain, the more it anticipates pain and acts to prevent it.

The bigger a creature's brain, the more it anticipates pain and acts to prevent it.

Pain builds neural pathways without effort or intent. These pathways motivate responses that the verbal brain has trouble making sense of. An amazing example is the girl who panicked when she heard laughter. The girl had been in a car accident that killed her friends. She woke up from a coma to the bad news with no memory of it. The crash had triggered a huge cortisol surge, which built huge connections among the neurons active at that moment. This includes the neurons triggered just before the impact because they

would still be active. Of course, the girl was partying and laughing just before the impact.

Old pain circuits can be quirky, but they have survival value. Imagine a baby monkey attacked by a raptor. An instant before the attack, the bird blocks the sun and the monkey sees a sudden darkness. That wires the little monkey to expect pain when it sees a sudden darkness. That advance warning signal may be enough to save the monkey's life in the future.

Disappointment

Cortisol is triggered by disappointment as well as pain. If you seek greener pasture and only find dead grass on the far side of a hill, your hunger continues. Hunger is cortisol. The cortisol of disappointment wires a mammal to anticipate pain in similar settings.

Lions are disappointed in 90% of their chases. A lion releases cortisol when it sees a gazelle get away. The bad feeling motivates the lion to stop the chase and find a better prospect. Bad feelings promote survival because a lion would starve if it kept chasing the one that got away. Bad feelings help a mammal meet its needs as much as good feelings. The brain strives to make good decisions about investing energy because that's your scarcest resource. When your energy investment fails to bring anticipated rewards, cortisol makes it feel like a survival threat.

Social disappointment triggers cortisol as much as physical disappointment. If a baboon fails to get

support from its troop mates when chased by a lion, cortisol wires in a bad feeling about those troop mates.

Social disappointment is a matter of life and death from the mammal brain's perspective. A baboon who risked its life for its troop mates will get disappointed by them at times. Social disappointment motivates action that promotes survival. Baboons groom each other's fur to build social alliances, and when old allies disappoint, a baboon will groom new potential allies. Sometimes these grooming are not reciprocated. Sometimes they're even rejected! Cortisol surges, and motivates a baboon to keep seeking new allies. Bad feelings help a mammal navigate its social world in order to meet its needs.

Social disappointment is a matter of life and death from the mammal brain's perspective.

Cortisol tells your cortex to find evidence of disappointment, and it is designed to find evidence when it looks. You have ten times more neurons going from your cortex to your eyes than the reverse, which means you are ten times more equipped to tell your eyes what to look for than to just take in whatever comes along. You are not consciously telling your eyes and ears to look for threats, but they must sift a flood of detail to make sense of the world. Your brain would

miss urgent cues if it tried to take in everything. It evolved to sift for information relevant to your survival.

So what if you have an emergency response when it's not a real emergency? Your brain is designed to trust its own alarm signals, not to ignore them. If your ancestors ignored their alarm signals, you would not be alive today. So when you try to ignore your inner siren, you feel like you're threatening your own survival. You can learn to redirect your alarm response instead of trying to ignore it. Our generation is lucky to have the information needed to do this.

Nature's operating system

The limbic system cannot tell you in words why it turned on the chemicals. Your verbal brain lacks insider information, so it's always guessing about your feelings.

Do not assume there's a good guy and a bad guy in your brain. The verbal brain is not as wise as you think, and the limbic brain is not as flawed. Research shows that we need our limbic brain to make decisions. Without it, our cortex weighs pros and cons endlessly without reaching a conclusion. Each brain has strengths and weaknesses, and they're designed to work together. That is the genius that kept your ancestors alive. So instead of expecting a war between your two brains, you can expect them to work together.

Instead of expecting a war between your two brains, you can expect them to work together.

We humans are born with billions of neurons but very few connections between them. This makes us more vulnerable at birth than any other creature. A gazelle can run with the herd a few days after it's born. A mouse is a parent by two months of age, and a grandparent by four months. A reptile leaves home the instant it cracks out of its shell, and if it doesn't leave fast enough a parent eats it. The eighteen years we humans take to wire our brains is a very long time from nature's perspective.

A reptile can leave home at birth because its brain is hard-wired with survival skills. These skills are limited, and most reptiles are eaten by predators before they reproduce. Their parents don't get upset; they just make more babies. A female reptile can produce hundreds, so the species survive. We mammals can't do that because a warm-blooded baby is so hard to gestate. We can only keep our genes alive if we protect each and every newborn. This early protection frees us to be born with the ability to learn instead of with hard-wired skills. You may think your early learning is useless, but it's a gift that took millions of years to evolve.

We mammals are designed to build knowledge instead of being preloaded with the knowledge of our ancestors. The bigger a creature's brain, the longer its childhood, because it takes time to build circuits from experience. The more a creature relies on learned experience, the more dependent and vulnerable it is at birth. A species cannot survive unless its young learn the skills necessary to meet their own needs before their parents are gone. We humans are born with a huge wiring job ahead of us.

We mammals are designed to build knowledge instead of being preloaded with the knowledge of our ancestors.

Crying is one of the our few inborn survival skills. Crying is triggered by cortisol. A baby surges with cortisol because it feels urgent that it cannot meet. Crying works. It brings relief, which triggers happy chemicals. That wires in information effortlessly, building a pathway that helps meet needs in the future. Each of us got wired by the random chance of early experience.

No one has "perfect" wiring, because no one's early experience can perfectly anticipate future needs. It would be foolish to even suggest perfect wiring, but it has become commonplace to compare one's self to a

presumed ideal. (The problem of social comparison is explored below.)

We rely on old wiring despite its imperfections because it's efficient. The electricity in your brain flows like water in a storm, finding the paths of least resistance. Electricity flows into the paths that exist the way a car drives on the roads that exists. You can build new roads, but it's harder than you expect because tiny new trails have trouble competing with well-developed highways .

Our neural circuits have much in common despite individual differences because our experiences have much in common. Each of us is born with urgent needs that we cannot meet. The first circuit in each brain—the foundation on which later circuits rest— is the anxiety of being powerless in the face of survival threats. A baby does not comprehend its vulnerability, of course. It enjoys comfort and protection. But happy chemicals are not designed to be on all the time. Each brain seeks more, and gets disappointed sometimes. Each brain seeks happy chemicals with a sense of urgency because that promotes survival.

The first circuit in each brain is the anxiety of being powerless in the face of survival threats.

Your Happy Chemicals*

A newborn is not crying for milk; it doesn't know what milk is. It cries because its blood sugar has fallen. When milk trickles into a newborn's mouth, dopamine is released. It's the feeling we call "joy" with our verbal brain, but it's the limbic brain's signal that a need has been met. You may say it's wrong to equate joy with meeting needs, but the link is obvious when you understand dopamine circuits.

Neurons connect when dopamine flows, which wires you to turn on the good feeling in anticipation of meeting a need the next time you see something similar. The next time a newborn hears its mother's voice, its dopamine turns on and it expects relief. Each experience adds new associations, so a baby soon learns to anticipate meeting its needs when it hears footsteps. Before it knows what people are, it knows what relief is.

Dopamine is metabolized in a short time and the good feeling is gone. To get more, you have to meet a need again. Imagine a monkey whose blood sugar is falling. Past experience has wired it to respond by scanning for good things to eat. Dopamine surges when it sees a piece of fruit high in a tree, and it moves toward it. Each step closer triggers more dopamine. The good feeling peaks when the monkey sees the

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* A more complete explanation of the happy chemicals is in my book, *Habits of a Happy Brain: Retrain your brain to boost your serotonin, dopamine, oxytocin and endorphin levels.*

food within its grasp. Then the dopamine stops because there is no more information to be processed. The monkey enjoys the fruit itself, and then after a bit of rest it looks for a way to stimulate more dopamine. When food is scarce, foraging might take all of a monkey's time; but when food is abundant, social needs get more attention. You have to step toward an unmet need to trigger the great feeling of dopamine.

Our brain doesn't waste dopamine on needs that have already been met. It habituates quickly to existing rewards, so "new and improved" is what stimulates it. We evolved to take what we have for granted because seeking promotes survival. You have probably heard that "our society" causes this impulse, but it's easy to see in every society and every mammal. This is clearly demonstrated by a landmark study that trained monkeys to do a task in exchange for a spinach leaf. After a few days, the researchers gave the monkeys a sweeter reward instead— a sip of juice. The monkeys' dopamine soared because sugar meets needs more than the expected reward. After four days of the sweet reward, no dopamine response to the juice was detected. The monkeys had obviously rewired their brains to expect the reward, so no dopamine was needed. The brain saves its dopamine for new information about rewards and doesn't waste it on rewards that match existing circuits.

This study has an amazing twist. The researchers switched back to spinach and the monkeys flew into a rage and threw the spinach back at them. The

monkeys had been content with spinach a week before, but now they were enraged by the loss of a reward that didn't make them happy when they had it. Spinach disappointed the expectations created by the new dopamine pathway.

The monkeys were enraged by the loss of a reward that didnt make them happy when they had it.

Dopamine's job is to record new information about meeting your needs. It would be nice to have the great feeling all the time, but it's not designed to work that way. A baby's first taste of milk triggers dopamine, but soon the reward is expected and the baby seeks new information about rewards.

The fleetingness of dopamine complicates life. We anticipate new rewards but they don't always come. We start learning about disappointment in infancy because our cries do not always bring relief. Cortisol makes that feel like a survival threat, which motivates a child to try something new. We learn to walk and talk because dopamine relieves cortisol. From infancy, we toggle between a powerless sense of threat and a joyful sense of discovery.

Our ancestors foraged constantly to survive, and natural selection built a brain that rewards you with a good feeling when you find new resources. But our

eyes and ears are not wired up at birth. The connections we need to distinguish sounds or perceive depth are built by interacting with the world. Dopamine fuels that interaction by making it feel good. Gradually, each child builds a mental model of the world in order to meet its needs.

Dopamine is not designed to make you feel good all the time; it's designed to motivate action to meet your needs. Whether you are a baby or a monkey or a hurried modern office worker, your brain is always looking for way to meet a need so you can enjoy the dopamine. This fluctuation between anxiety and relief is nature's operating system.

Dopamine is not designed to make you feel good all the time. It's designed to motivate action to meet your needs.

As a child explores the world, it discovers its own limitations. It realizes that it needs help to meet its needs. A sense of urgency about social needs gets grafted onto its urgency about physical needs. Fortunately, a special happy chemical rewards you for finding social support: oxytocin.

Oxytocin creates the feeling we call "trust." Animals release oxytocin when with their herd or pack

or troop. Oxytocin falls when a mammal is isolated, motivating a return to the safety of social support.

We want the nice feeling of oxytocin all the time, but that would not promote survival. You would trust people you shouldn't trust if you released it constantly. Instead, your brain is designed to make careful decisions about when to release the oxytocin. It relies on circuits built from past oxytocin flows to do that.

We surge with oxytocin at birth because it is the trigger of labor contractions. (And egg laying in reptiles!) But oxytocin is soon metabolized so we need more to feel safe. Mammals lick or cuddle their newborns because touch stimulates oxytocin.

Touch only triggers it when trust has already been established. Anyone close enough to touch you is close enough to kill you in the state of nature. Animals are particular about who they let touch them. They relax and groom with trusted individuals, but they are hostile toward strangers, even of their own species. You may find it hard to think of our furry friends in this way, but the evidence is clear. They save their oxytocin for opportunities to promote survival.

Each oxytocin flow connects neurons that wire a mammal to trust in similar future circumstances. Sometimes you are separated from those you trust, and your oxytocin falls. Sometimes your trust is not reciprocated, and sometimes it's even betrayed. Each disappointment of trust wires in cortisol. The brain keeps seeking oxytocin where it has enjoyed it before,

and if disappointment results, new possibilities are explored.

The quest for social support is complicated by another happy chemical: serotonin. It is released when you assert yourself and prevail. Serotonin is the calm confidence that it's safe to assert yourself to meet your needs.

Children grab toys from others because serotonin makes it feel good. This is why children need to be taught over and over to restrain the impulse. When someone grabs your toy, it triggers your cortisol, but when you grab it back, the nice serotonin feeling replaces the threatened feeling.

Natural selection built a brain that rewards you with serotonin when you have a moment of social importance. No one likes to admit their own urge for social dominance, though we easily see this in others. We struggle for ways to stimulate the good feeling without grabbing, but there are no easy answers. It helps to know how serotonin works in the state of nature.

Monkeys are always grabbing food from each other. They get bitten or clawed if they grab from a stronger individual. The pain triggers cortisol, which wires them to anticipate pain if they do it again. Thus, monkeys are careful to look for weaker individuals before they grab. The primate brain constantly compares itself to others, and serotonin is released when it see itself in the dominant position. This unpleasant fact of life is unmentionable in today's

world, but if you want to understand your neurochemical ups and downs, you must know the nature of serotonin.

Natural selection built a brain that rewards you with serotonin when you have a moment of social importance. This unpleasant fact of life is unmentionable in today's world.

The point is not that you should push and grab. The point is that you may feel pushed and bullied without understanding your own participation in the matter. Your brain seeks the one-up feeling just like other mammals. It is not designed to release this good feeling all the time for no reason. You must seek and sometimes get disappointed. When others seek the one-up position, it can feel like a survival threat. Accepting your true nature helps relieve this anxiety. (This is the subject of my book, *I, Mammal: How to Make Peace With the Animal Urge for Social Power*.)

Monkey don't bully juveniles. Each species is born with "juvenile markers" that adults defer to. Once those distinguishing traits disappear, a young monkey is fair game. It must compete with its elders or starve. It soon wires itself to find safe opportunities to assert. You may think there's no need to compete because the

forest is full of food. But it's dangerous to forage alone, so animals do it in groups. When a monkey finds a good foraging spot, a stronger monkey is likely to push it aside. The weaker monkey is hungry, so scans the troop mates clustered around the resource for a place where it can hold its own. The same principle shapes reproductive opportunity, which really gets the survival brain's attention.

We have inherited a brain that constantly compares itself to others, and rewards you with serotonin when it sees itself in the one-up position. It alarms you with cortisol when it sees itself in the one-down position. The good feeling of serotonin is soon metabolized, so you have to keep finding ways to stimulate it. When others do this, it's easy to sneer, but when you do it, you feel like you're just trying to survive. We are told to blame this impulse on "our society," but it's in every society and every animal.

Each child looks for ways to enjoy the good feeling of serotonin. If children are left to themselves, they can get wired to push around smaller kids and fear bigger kids. Adult intervention helps kids build alternative ways to feel socially important. But the impulse is so deep that mere words are not enough. If a child grabs a cookie and you let them keep it, their brain learns that grabbing gets rewards. If you let a child cheat on tests, they learn that cheating gets rewards. Well-meaning adults often fail to recognize the lesson they are teaching with the actions beneath their words. The

young brain learns from concrete experience rather than abstractions.

If a child doesn't learn self-restraint at home, they will learn by getting bitten and clawed. Parents are eager to prevent this so they design less hurtful ways to wire in healthy expectations about grabbing in. Yet many parents also find it hard to deny their child the cookie.

In our unspoken quest for social importance, we often end up feeling bullied. No one is an objective judge of bullying because we're all seeking serotonin. The problem is so daunting that people tend to blame "the system," and dream of an ideal world that gives them a one-up feeling all the time. (This is the subject of my book *How I Escaped from Political Correctness, and You Can Too*.) You can stop alarming yourself with the belief that others are putting you down. You can recognize that they are just trying to stimulate their serotonin, and you are trying to stimulate yours.

You can stop alarming yourself with the belief that others are putting you down. You can recognize that they are trying to stimulate their serotonin, and you are trying to stimulate yours.

It bears repeating that I am not advocating an endless quest for social dominance. I advocate taking responsibility for your feelings instead of blaming them on "our society."

Serotonin is not designed to flow all the time. That would not promote survival. But we want the great feeling all the time, so when other needs are met, this is the need we focus on. Any serotonin you manage to get is soon processed and eliminated, so you are always seeking more. To make things more difficult, your brain habituates to the social importance you have, so something new is needed to get it going. Neurons connect when serotonin flows, which wires you to expect serotonin in ways that worked before. Such expectations are often disappointed. Sometimes you seek the one-up position and end up with pain. The bad feeling wires you to avoid that self-assertion strategy in the future. Each brain strives to stimulate the one-up feeling without triggering pain. This striving annoys us when we see it in others, but when we do it ourselves, it seems only fair.

Another happy chemical called *endorphin* is not covered by this book. Its natural function is to relieve pain. It evolved for emergencies, not for us to inflict pain on ourselves. We are not meant to seek endorphin. People do seek it, of course, and thus end up with behaviors that lead to long-term anxiety. The solution is to focus on the other happy chemicals.

The natural quest for happy chemicals sometimes leaves us with a sense of alarm. (More on that in my

book *The Science of Positivity: Stop Negative Thought Patterns By Changing Your Brain Chemistry.*) We respond to that alarm with old neural pathways. When you understand these pathways, you can turn off the alarm.

The human alarm system

We have seen that our pathways are wired from experience, but early experience is what counts. A young brain is full of "myelin," a fatty substance that coats neurons the way plastic insulates a wire. Myelinated neurons conduct electricity a hundred times faster than undeveloped neurons, so anything you do with your myelinated neurons feels natural and normal. Whatever stimulated your happy chemicals during your myelin years seems like an easy way to stimulate them now. And whatever triggered your cortisol during your myelin years seems like a certain threat. You can build new pathways, but it's harder than you expect, so it's important to understand the pathways you have.

Myelin is abundant before age eight and during puberty. Your experiences in those years built the superhighways of your brain— the "white matter." That may be hard to believe since these don't seem like the years of wisdom. But a closer look makes it easy to see the survival value.

When a child is under eight, they have so much myelin that they store their experiences uncritically. If

you tell a six-year-old that the moon is made of green cheese, they will store that as a fact. But if you say that to an nine-year-old, they compare your assertion to what they already know. Their knowledge is limited, of course, but the very act of referencing it is a huge step. A nine-year-old stores new information in the context of its own past experience, thus building new leaves on existing branches instead of always building new branches. Infants need high myelin to build a framework fast, but a dip helps children fill in the framework.

Myelin spurts again during puberty. This evolved because mammals find mates by moving to a new location.* This prevent in-breeding, though it works without conscious intent. Brains good at storing new information during puberty were more likely to survive and get passed on. We humans have historically moved around puberty as well. We had to learn new languages, new faces, new survival skills, and a new way to get home in the dark. Myelin made it happen.

This is why we all end up with a neural network built in puberty. No one intends to see the world through a lens built in high school, but myelin is powerful. Whatever triggered your happy chemicals in adolescence built neural superhighways that create your expectations today. Whatever triggered your cortisol in your teen years built neural superhighways

* Typically, either all the males move or all the females move, depending on the species.

that alarm you today. We are all navigating toward rewards and away from pain using the navigator we built in adolescence. We can adapt it after puberty, but we have little myelin to do it with.

Whatever triggered your happy chemicals in adolescence built neural superhighways that create your expectations today. Whatever triggered your cortisol in your teen years built neural superhighways that alarm you today.

The human cortex

When anxiety surges, you may blame some "irrational" part of the brain. You may think a return to the "rational" part will fix it. The cortex is widely presumed to be rational. The human cortex is more than twice as big as an ape's, and our prefrontal cortex is even more distinct from our animal ancestors. But the human cortex contributes to anxiety in important ways.

1. Our cortex is skilled at anticipating the future, so we feel potential future threats as if they're happening right now.
2. Language expands our ability to receive the anxiety of others, and to transmit anxiety in ways that get rewards.
3. The cortex is good at generalizing.

Anticipating the future

The human cortex can activate circuits intentionally instead of just waiting for the senses to activate them. Of course, it's easier to activate paths already built from past experience, but we are less limited by sensory input than animals.

Humans meet survival needs by generating expectations about the results of our actions. A gazelle does that too, but the human cortex adds new dimensions. We can imagine alternative scenarios and replay each one with new assumptions. We can project consequences far into the future. Our ancestors could imagine freezing to death in winter, so they invested a lot of effort storing firewood in the fall. When they moved to a new environment, they projected future consequences from new information and designed new solutions.

Our expectations about future rewards and threats are shaped by the circuits we have. For example, if you get sick after you eat your favorite food, you build a new circuit that is repulsed about the food.

Expectations about what meets your needs are just electrical flows down the paths you have.

Information feels more true when the path is easier to activate. Future scenarios feel more true when they fit your existing pathways. It's easy to see such biases in other people's projections, and hard to see them in yourself. When your electricity goes there, it just feels true.

We strive to avoid disappointment because wasting energy is a survival threat. Future disappointments are easy to imagine, alas, so for each potential step toward meeting your needs, you can imagine a negative scenario. It's easy to see how a big cortex ends up with anxiety.

Language transmits anxiety

All mammals perceive the alarm of their group mates, but language expands our ability to send and receive these signals. We pride ourselves on our independent thinking, so it's useful to see how monkey language communicates alarm. Research shows that monkeys have different alarm calls for different threats. One call causes all the monkeys in a tree to look up (for overhead threats, such as birds of prey). A different call has them all looking down (suggesting ground-dwelling predators). And they look sideways when a third call is heard (where snakes would be found). Different simian species in the same tree respond to each others' alarm calls, though the sounds are different. It's easy to learn the alarm calls of

another species because neurons connect when cortisol flows, so whatever you experience during a moment of distress gets included in the circuit.

Gazelles transmit anxiety too. A gazelle learns to run when it sees its herd mates run. Human language allows us to sound that alarm without actually running.

When a young gazelle strays from the herd, its mother gets highly agitated. Sometimes she bites the child when they reunite, and pain wires the young brain to anticipate pain when it strays from the herd. Language allows humans to build protective alarm circuits in their young without actual biting.

"Mirror neurons" increase a mammal's awareness of the distress of others. Mirror neurons have the special function of activating when a mammal observes another individual experience rewards or pain. Language increases our ability to mirror the distress of others.

Today's "empathy" trend focuses on the benefits of enmeshing in the pain of others and obscures the costs. You feel obliged to absorb the distress of others because you risk losing social rewards if you don't. This builds a culture of distress. Children in particular do not benefit from continual exposure to the anxiety of others. A myelinated anxiety circuit builds and leads to a life of anxiety. The younger and more often you're exposed to second-hand anxiety, the more you get wired to respond to the world anxiously.

It is natural to get triggered by other people's negativity, of course. Our brains are inherited from

critters who survived by keeping their heads down when others kept their heads down. In the animal world, you really do become a target for predators if your head is up when others duck. So when you hear a water cooler conversation about keeping your head down, you may surge with cortisol despite your best intentions.

The younger and more often you're exposed to second-hand anxiety, the more you get wired to respond to the world anxiously.

You use language to express anxiety as well as to receive it. Expressing anxiety can relieve it in the short run, but it can strengthen it in the long run. If you get rewards when you express anxiety, you build the circuit. Oxytocin can reward you for expressing anxiety because it builds social trust. Serotonin can reward the expression of anxiety if it puts you in the one-up position. Dopamine is stimulated as you anticipate rewards. You aren't intentionally seeking rewards when you express anxiety, but neurons connect when you get them. A young brain can easily learn that anxiety is the way to feel good.

Children develop language because it meets needs better than crying. If anxious talk meets needs better than calm talk, a child gets wired for anxious talk.

A big cortex is good at generalizing

Small brains fear threats that closely resemble threats from the past. A horse fears people in big hats if it was once harmed by a person in a big hat. Big brains generalize. Instead of just avoiding hot stoves that look like the one you touched, you avoid getting burned by generalizing about the cause.

Our ability to generalize about threats helped our ancestors survive. When their food or water got contaminated, they found patterns and learned to protect themselves. Our lives benefit from the threat awareness our ancestors accumulated. But we can become so aware of potential threats that they preoccupy us.

The urge to prevent problems is valuable, but when you generalize about every possible disappointment, you can end up with a lot of cortisol. When you generalize about social disappointments, the scope for anxiety is wider still. We try to prevent social disappointment by anticipating the reactions of others, but people don't always fit the circuits you predict them with. Cortisol is triggered and wires you to anticipate more social disappointment. Your mammal brain makes it feel like an urgent threat, and your intelligent cortex collects facts to validate the feeling.

Generalizing about threats has a curious way of stimulating happy chemicals. Oxytocin is stimulated as you bond with people who share your sense of threat. Serotonin is triggered when you feel superior about your awareness of threats. Dopamine is released when your threat predications are correct. You can easily wire yourself to feel good about focusing on threats.

If you think you must feel anxious until all threats are relieved, your anxiety will never end. You cannot protect yourself from every imaginable threat or disappointment. You have more power over your electricity than you have over the world. You can divert electricity from the alarm circuit to a happy chemical circuit. You can build a circuit that expects to meet your needs. You will feel safe with that circuit because you will anticipate rewards instead of anticipating pain. Part 2 shows you how. First, let's inspect your individual alarm system so you can locate the circuits you want to divert.

2
Your Unique Individual Alarm System

Nothing is wrong with you. Your brain is doing its job– promoting survival by seeking happy chemicals and avoiding cortisol. It does that with pathways you built before age eight and during puberty. Sometimes it blasts you with cortisol for reasons that are hard to make sense of. What you do in that cortisol moment determines whether you end up with more cortisol or shift back to happy chemicals.

What you do in that cortisol moment determines whether you end up with more cortisol or shift back to happy chemicals.

You may think other people's brains are doing it better. It may seem like they are effortlessly happy and you are missing out. Maybe you think they are wired in a way that prevents bad feelings. The truth is that we all struggle to manage our brain chemicals. There is no

sure-fire way to have happy chemicals all the time. Everyone releases cortisol when disappointed by their familiar strategies for meeting needs. And everyone feels like their survival is threatened when their cortisol surges, even if they don't consciously believe it.

It's hard to manage your alarm system because your electricity flows so effortlessly into old circuits. This chapter slows down the action so you can make sense of it. Then it will be easier to design and build your safety circuit in Part 2.

Fill in the blanks in the exercises below. The first set of questions is followed by a guide for interpreting your answers. There are no preferred answers. The goal is to discover your unchartered territory, not to find fault with yourself. Think of yourself as an explorer, not a judge. Follow your streams where they lead and you will have more power over them.

1. Imagine you're feeling great because you just got a reward you were seeking. What is it? (From your brain's perspective, a reward is any new way to meet a need. Maybe it's a future need. Maybe it's a social need, such as social importance or social support. Maybe it's a new flavor of ice cream. What matters is your excitement, not someone else's intention to reward you.)

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2. Now imagine that the dopamine you've triggered has metabolized and the good feeling suddenly stops. How do you feel now?

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3. How do you explain that feeling to yourself?

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4. What do you do next?

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5. Now imagine you choose a next step to stimulate the joy of dopamine. What is it? (It could be short-term or a step toward a long-term reward. More explanation is at InnerMammalInstitute.org and in

Habits of a Happy Brain: Retrain your brain to boost your serotonin, dopamine, oxytocin and endorphin levels.)

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6. Ooops. Your step failed to trigger the good feeling you expected. How do you feel now? What do you tell yourself? What do you do next?

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7. Now imagine trying a different dopamine stimulator from the one you just tried. (Many examples are in *Habits of a Happy Brain.)*

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8. Yikes, that didn't work either! How do you feel? What do you tell yourself? What do you do next?

9. Imagine you've just stimulated some oxytocin and you're enjoying the nice feeling of social trust. How did you do it?

10. Soon that nice oxytocin feeling is gone. How do you feel when that happens? How do you explain it? What do you do next?

11. Now you choose another step toward oxytocin. What is it?

12. Ooops. It fails. How do you react? What do you tell yourself? What do you do next?

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13. Imagine you've just stimulated some serotonin and you're enjoying the nice feeling of social importance. How did you do it?

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14. Soon that nice serotonin feeling ends. How do you feel when it's gone? How do you explain it? What do you do next?

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15. Now you choose another step toward serotonin. What is it?

16. Ooops. That failed. How do you react? What do you tell yourself? What do you do next?

17. Imagine that your cortisol is surging. You look for an explanation. What do you find?

18. What do you do next?

Interpret your answers

1. When did you start seeking the reward you wrote down in #1 above? Think back to its earliest roots. How do you think you got wired to expect the joy of dopamine in that particular way? Be sure to consider social rewards— the dopamine that's triggered when you anticipate a nice oxytocin or serotonin experience. Remember that your goal is not to find fault with yourself but to explore new terrain.

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2.Your answer for #2 above may involve a let-down feeling. Happy chemicals mask cortisol, so when a good feeling passes, bad feelings can suddenly get your attention. Even if nothing bad has happened, you are more aware of everything bad that has ever happened to you and to everyone who has ever lived. You feel it like it is happening right now. You are more aware of the fact that you will not survive forever. Someday your natural urge to promote your survival will fail and there will be a future that you will not be a part of. This horrible thought gets less attention while your dopamine is flowing. The world looks better while you're eating an ice cream, but when the last lick is gone, bad thoughts can take you by surprise. When your electricity flows there, you might have a sudden

feeling that something is wrong even if nothing is wrong. Think of a time in the past week when you experienced this: maybe the party was over, you finished the marathon you'd been training for, you reached the end of a favorite TV series, and the last lick of ice cream was gone. When this happens, knowing it's just dopamine droop halts the spiral of thinking something is really wrong.

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The party is over, you finished the marathon you'd been training for, you reached the end of a favorite TV series, and the last lick of ice cream is gone. When this happens, knowing it's dopamine droop halts the spiral of thinking that something is really wrong.

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3. In your answer to #3 above, you may have found it hard to interpret your dopamine droop because you've

experienced it your whole life without conscious awareness. Anxiety may climb when dopamine droops. Whether it's the fear and panic of a cortisol surge or the frustration and stress of a cortisol dribble, your brain tries to help by finding evidence of threat. More cortisol results, and thus more threat-seeking. Think of a recent cortisol moment that filled your mind with evidence of threat.

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4. It's common to respond by seeking another ice cream or another party or a another marathon because the brain expects good feelings where it has gotten them before. What did you do the last time you had that "do something" feeling? It would be nice to have the joy of dopamine every minute of every day, but it's important to know that you're fine without it. You've simply inherited a brain that evolved to seek.

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5. The best way to relieve cortisol is to take a step. You may not feel like taking steps because you can only

imagine bad consequences, but doing something helps to relieve the "do something" feeling. Taking a step gives you a bit of dopamine, which makes it easier to take the next step. Of course you don't always know which step will work, but gathering information about your next step is also a step, so you still get the dopamine. Think of an example of a small step that shifted your attention from negative expectations to more positive expectations.

Doing something helps to relieve the "do something" feeling.

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6. We respond to frustration with pathways built in youth. We tend to mirror the frustration responses of those around us. Think of some examples of how you might be mirroring someone else's response to disappointment, let-down, failure, or threat.

7. Our expectations about rewards depend on the dopamine circuits we've built from past experience. Your circuits make it easy to expect a good feeling from some steps, and harder to expect a good feeling from other steps. Once you've gotten wired to expect a future reward, each step toward it triggers dopamine today. But sometimes these steps disappoint, and rewards seem as far away as ever despite your best efforts. Disappointment motivates you to focus on a more immediate reward. But short-run rewards often do long-run harm, and you can end up fearing harm from the very actions that bring you pleasure. How do you choose between long term and short term rewards?

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8. Maybe you failed to get the reward in #8 above, or maybe you got it and didn't feel the joy you expected. Dopamine disappointment happens to everyone because our brain quickly habituates to a reward it has. If you were thirsty in the desert, you would be thrilled to see an oasis in the distance and get more excited with each step. But the limitless water you have now does not make you happy. If you discovered a new planet, it would make you happy for a while, but the

dopamine would soon be metabolized, and you might look for a bigger planet to stimulate more. Think of something that used to excite you but doesn't anymore because you already expect it.

9. Trace the oxytocin moment you wrote about above to something that stimulated social trust for you when you were under age eight. What triggered your social trust in adolescence? How do your early oxytocin experiences resemble to your current ways of stimulating it?

10. When your oxytocin droops, you may feel like you have no support anywhere. This feeling can creep up on you even if nothing bad has happened. Our brains evolved to constantly seek safety in numbers and to trigger alarm when you wander away from the herd. You may long for peace and quiet with your conscious brain, but when you get it, your oxytocin droops and

leaves you with the anxiety of early separations. The helplessness of childhood wires us to see social isolation as a survival threat. Think of a recent time when you felt isolated, and look for overlaps with your early disappointments.

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11. Social trust has a price. We are constantly deciding how much energy to invest in reciprocal alliances and how much to invest in individual pursuits. A gazelle decides in every moment whether to step closer to the herd or to step closer to greener pasture. We want the good feeling of oxytocin all the time, but getting it diverts effort from other pursuits. How do you make this choice?

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12. Social trust is hard to build because we have so many cortisol circuits from old disappointments. Anything that resembles old social disappointments triggers a sense of alarm that's hard to make sense of. Everyone has social disappointments because no one 's

social expectations are always met. Small steps toward trust can build new oxytocin pathways without triggering too much alarm. Monkeys seek new grooming partners when their old alliances fail, and they're rewarded with the good feeling of oxytocin. How could you seek new grooming partners?

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13. Trace the serotonin moment you wrote about above to something that stimulated a sense of social importance for you when you were under age eight. What gave you a sense of social importance in adolescence? Whatever triggered that good feeling wired you to expect more of it from similar behaviors in the future. Think of three early roots of your current expectations about social importance.

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14. A loss of social importance is a survival threat from your mammal brain's perspective, even though you don't consciously think that. Think of three early disappointments or threats to your social status. How do those three cortisol circuits influence you today?

15. It can be hard to take steps toward social importance because disappointment is so easy to imagine. Think of three new ways to step toward a feeling of social importance despite the risk of disappointment.

16. We all learn that we shouldn't care about social importance, yet the mammal brain seeks it as if your life depends on it. You may resent the social importance of others because your inner mammal sees how it threatens your own. A terrible quandary results: bad feelings if you seek social importance, and bad feelings if you don't. This problem cannot be solved by "our society" because the people around you will always be mammals and so will you. The solution is to be honest about your urge for serotonin and carefully choosing steps toward it. (This is the subject *I, Mammal: How to Make Peace With the Animal Urge for Social Power*.) Notice your mammalian status anxiety

and think of ways to give your inner mammal a moment of social importance.

We all learn that we shouldnt care about social importance, yet the mammal brain seeks it as if your life depends on it. You may resent the social importance of others because your inner mammal sees how it threatens your own.

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17. Every step you take toward serotonin, dopamine, or oxytocin can go wrong. Past failures make it easy to imagine a bad outcome. An effortless flow re-activates your early sense of powerlessness and insignificance, giving today's challenge an air of urgency. You are not as powerless as you were as a child, but that old circuit

is easy to trigger. You can't control the world but you can learn to control your electricity. What would you be if you avoided that one circuit and relied on your billions of other neurons?

The old sense of powerlessness and insignificance is re-activated, giving today's challenge an air of urgency. What would you be without it?

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18. Part 2 shows you how to build a new safety circuit, to give your electricity a new place to flow. You'll find out what it takes to build new pathways, and then you will design the new pathway that's just right for you. What would you like to include in your safety circuit?

Part 2
How to Turn Off Your Anxiety

3
How to Rewire Your Brain To Feel Safe

It would be nice if happy chemicals flowed all the time, but that's not how they work. They evolved to reward you for taking survival steps. They are meant to turn off and on. When they're off, you're in neutral, ready to find the next survival step. Neutral is not an emergency, but sometimes it feels that way. Threats get your attention when you're not distracted by happy chemicals. Cortisol may get triggered.

Once cortisol is released, it stays in your body for more than two hours. During this time, your brain actively looks for threats. It's hard to feel good about anything when you're "under the influence." You scan for a good solution but nothing seems good enough.

When the "do something" feeling is on and you don't know what to do, you can end up in a bad loop. How can you make it stop? Relaxation is often suggested, but you don't feel like relaxing. You feel like doing something to escape the threat.

Here is a simple action plan to escape this loop:

1. Listen to your inner mammal for one minute.
2. Distract yourself with a pleasant activity for twenty minutes.
3. Define your next step in one minute.

Let's see why these steps are powerful, and how to rewire your brain so they come to you as automatically as your old response comes today. Each time you repeat these steps, you build a path that diverts your electricity from negative to positive expectations. As electricity flows away from those threat circuits, you literally forget to feel bad.

As electricity flows away from those threat circuits, you literally forget to feel bad.

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1. Listen to your inner mammal for one minute

You can honor your natural impulse to locate the threat. When you feel like a siren is blasting, trying to ignore it feels worse. So here is a way to listen to your inner alarm bells without adding more cortisol.

For sixty seconds, stop what you're doing and listen to your impulses. If there's an obvious emergency, you will stop and take action of course. Otherwise, ask yourself "what do I want?" The answer isn't important; what matters is the focus on what you want rather than on what you don't want. You are helping your inner mammal find a way for your needs to be met instead of the all-too-familiar feeling that your needs will be ignored. It's essential to listen to your inner mammal with respect instead of finding fault with it. The exercises in Part 1 help you do this.

Be prepared with a timer that you know how to use so you can easily turn it on in a moment of distress. When the minute is over you will have a pleasant activity waiting for you. You may not be in the mood for a pleasant activity at this point. Maybe you can't think of anything that would feel good except something that is bad for you in the long run. That's why a new neural pathway is needed.

The pathways in the brain build from repetition, emotion, and youth. Youth is fleeting. Emotions are flawed guides to long-term wellbeing. Repetition is your friend. Repetition is the the way to blaze the trail that leads where you want to go. If you repeatedly pull out your timer and ask what you want, a new trail will build.

It helps to visualize the new path you are creating. Neurons do not literally connect because there is always a tiny gap (synapse) between one neuron and the next. Electricity must jump the gap for a pathway

to activate. It's as if you have a tiny rowboat at the edge of each neuron ready to carry an electrical charge across to the other side. Repetition adds extra rowboats. Eventually you will also build extra docks for your rowboats because new synapses develop when neighboring neurons are repeatedly fired at the same time. With faithful repetition, you build yourself a whole fleet of rowboats. They will help your electricity flow easily in the direction you choose.

2. Distract yourself with a pleasant activity for twenty minutes

Twenty minutes is the time it takes to eliminate half of a cortisol release. The rest is gradually excreted over the next two hours. Twenty minutes gets you past the peak of your threat-seeking impulse, so your problem-solving efforts can be more effective.

It may be hard to hard to focus on a pleasant activity when your danger radar is on. All you want to think about is how to turn it off. If you were actually chased by a predator, distraction would kill you. But if the predator is just an internal construction, distraction stops it by diverting electricity. Distraction is popular because it interrupts the cluster of activation that triggers your panic button.

Distraction has a bad image because unhealthy distractors are easier to embrace in a moment of anxiety. Healthy distractors are harder to focus on while your emergency siren is blasting. Help yourself

by building a healthy distractor in advance so it's easier to flow into in a moment of distress.

The diversions that work for you today were built by the random chance of your past experience. Anything that made you feel good in your myelin years is an easy way to feel good today. But things that make you feel good in the short run are often not good for you in the long run. Addictions are the obvious example, whether it's food, alcohol, drugs, or activities like sex or gaming. Other unhealthy distractors include following the news and calling a friend who reinforces your negativity. It's easy to distract yourself for a moment with something that triggers more cortisol in the long run. A healthy distractor is a very valuable addition to your toolkit.

Embrace a healthy distraction by planning it in advance and repeating it enough to build the pathway. A healthy distractor is a valuable addition to your toolkit.

A distractor is anything that absorbs your attention in a moment when it's hard to focus. It absorbs you because it's connected to your happy chemicals. Most of your connections built effortlessly so it's hard to imagine building them consciously. To make it easier,

imagine a baboon being chased by a lion and saving its life by running up a tree. The great feeling of relief wires the baboon to scan for trees the next time it smells a lion. Your favorite distraction is the tree that you scan for when anxiety strikes. The hobby you focused on when you felt threatened as a child triggered a safe feeling by interrupting your sense of threat. The thrill you engaged in during adolescent moments of threat wired you to expect a safe feeling from that thrill, even if it's actually unsafe. You don't consciously think of your distractors as threat relief; you just anticipate good feelings when you turn to them.

It's harder to build a new distractor once your myelin years are over. It's even harder when the activity lacks an instant reward. But forty-five days of repetition will build a pathway that's big enough to flow into in a moment of distress. If you knit for forty-five days in a row, your brain will be able to go there in times of emergency. Knitting doesn't sound like fun when a lion is chasing you, but relief from threatened feelings is a huge reward. The following chapter helps you design the healthy distractor that's right for you, and the epilogue describes my own favorite.

So set your timer, focus on your healthy distractor, and turn to Step 3 in twenty minutes.

3. Define your next step in one minute

Taking your next step makes your inner mammal feel safe. You will never take that step if you wait for a

sure thing. No step is perfect, so embrace the best step you can find in sixty seconds. If nothing seems right, your next step is to gather information and evaluate your options. Define this step precisely and commit to the precise time you'll take it. Step 1's clarification of what you want makes this easier.

Sometimes you know the step you want to take, but it seems risky. The thought of taking a wrong step seems threatening, so you relieve cortisol in the short run by doing nothing. You end up with more cortisol because doing nothing fails to relieve the "do something" feeling. You will feel safer when you define a step and take it. If something goes wrong, you can define another step. And another.

You don't want to be someone who foolishly rushes into misguided steps. This is why you have learned to live with the constant siren blast. That fear of wrong steps is just an old pathway built from the random chance of past experience. If you repeatedly set your timer and take a step, you will build a new pathway. You will think of yourself as someone who meets their needs by taking one step after another. The more you step toward your needs, the more you will expect to step and expect your needs to be met.

When all your options look bad, you need to step closer to gather information. Stepping without complete information is often necessary. Stepping into the unknown is effectively safer than freezing while waiting for certainty. Don't criticize your inner mammal for seeking certainty. It is just doing its job

with the circuits you have. Now you will have a new circuit.

Dopamine is stimulated when you initiate your step. Oxytocin is stimulated when you plan a step toward social trust. Serotonin is stimulated by steps toward social importance. Defining your next step feels great because it gives your inner mammal what it wants: the expectation of meeting your needs. So start your timer and commit to that next step. It may feel risky at first but with repetition it will come to feel normal.

Defining your next step feels great because it gives your inner mammal what it wants: the expectation of meeting your needs.

These three steps may seem so unnatural that you can't imagine how they could ever feel good. You have to remind yourself that what seems natural now is the accident of experience. You can feed your brain new experiences to enjoy new responses. They don't have to be huge experiences like winning a marathon or performing in Carnegie Hall. They can be tiny experiences, repeated often.

Your new safety circuit will change the way you interpret your cortisol. You can see cortisol as a helpful nudge toward something new instead of evidence that

something is horribly wrong. You can interpret a dopamine droop as an opportunity to meet needs instead of as a real danger. You can interpret an oxytocin droop as a reminder to build social trust instead of as a sign that you're about to be eaten. You can respond to serotonin droop by seeking a way to feel important instead of feeling squashed like a bug.

-- You can interpret dopamine droop as an opportunity to meet needs instead of as danger.
-- You can interpret oxytocin droop as a reminder to build social trust instead of as a sign that you're about to be eaten.
-- You can respond to serotonin droop by seeking a way to feel important instead of feeling squashed like a bug.

4
Designing the Perfect Safety Circuit for You

New neural pathways are easier to build when you're just adding leaves to your trees instead of building whole new branches. So this chapter helps you adjust the three-step action plan to fit your unique neural network. You will design experiences that bring a sense of safety to your unique individual operating system. By understanding your circuits, you will flow comfortably into your one minute of self-listening, your twenty minutes of healthy distraction, and your next step.

1. How to listen to your inner mammal for one minute

Maybe it's hard to turn on the timer, since it never seems like a good time to drop what you're doing and examine your non-verbal impulses.

Maybe it's hard to know when you're listening to your inner mammal, since it may seem like you're listening all the time.

What you need is a clear exit ramp that leads from business as usual to your new self-care habit. I learned how to do this from an actual exit ramp. I used to drive

home from work exhausted after teaching night classes, so when I moved to a new house I had trouble getting off at the right exit. My automatic impulse would send me onto the old exit, and that left me circling in the wrong neighborhood late at night. How could I stop that?

"Paying attention" isn't good enough because a split-second lapse of attention at the wrong time can ruin everything. What mattered, I realized, was my attention at the precise moment I'm passing the old exit. So I made a habit of entering the far left lane as soon as I got on the highway. That forced me to cross four lanes of traffic to get off. This was different enough from my old habit to call attention to my automatic pilot. Once I did this a few times, my autopilot recalibrated.

Here's a way to trigger your attention before you exit to anxiety. It's a way to trigger your attention at the precise moment. The next time you notice anxiety, stand up and spin around in a circle. It may feel foolish, but the awkwardness of the physical action is enough to build a pathway that gets your attention. Don't worry about getting the right moment for now. Don't try to stop your anxiety or do anything else different. Just stop and spin. Gradually you start noticing your anxiety autopilot sooner and sooner.

If you are worried about looking strange in public, find another awkward gesture that's less visible. Tap your elbows together. Wiggle your fingers and toes. Touch your tongue to the roof of your mouth. As silly

as it seems, such vivid markers build a mental signpost that helps your conscious brain notice your anxiety. If you find this hard to do, reward yourself with a small piece of chocolate (or equivalent) each time you do it. Then you will do it because you want the reward. It won't take much chocolate to build your new exit.

After building this new habit for a week, you are ready to set your timer for one minute when anxiety strikes. Stop what you're doing and ask yourself what you want. Consciously listen to your inner mammal. There is no right answer. Being heard is what matters, and if you look for an answer that pleases someone else, you miss out on the chance to be heard. If you want to please someone else, that's fine too, as long as the impulse comes from you.

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Listening to your inner mammal may be frustrating at first since you can't find an answer that stops the cortisol. You want things you can't get, which seems to add to the anxiety. Your desires conflict, so the more you seek one thing the more you put another at risk. But you will notice patterns in your answers. Where have you heard those patterns before? Who might you be mirroring? When did you build those circuits? The

exercises in Part 1 make these questions easier to answer.

Finding the pattern shows you how you are sifting and sorting the world to fit your neural template. The world feels less threatening when you see how your own circuits triggered the threatened feelings.

Every inner mammal wants the same thing: to feel safe. You feel safe when you trust your ability to meet your needs and avoid harm. Everyone doubts their ability because disappointments are inevitable. But expecting to be safe feels better than expecting not to, and since each expectation is just a circuit, you might as well treat yourself to the happy one.

You may think safety is the wrong goal. You can think of people who seem to take great risks without anxiety. Each brain defines safety from its own life experience. Some brains have learned to link risky behaviors with dopamine, serotonin and oxytocin. Their happy-chemical strategies feel safe in the short run because they mask cortisol. This leaves them with a terrible conundrum as the behaviors that distract them from threatened feelings in the short run create more threatened feelings in the long run.

You can meet your needs if you are honest about them. It's not easy to be honest about your desire for serotonin (social importance), oxytocin (social support), and dopamine (new rewards). In today's world, there is little support for such honesty. You are not supposed to care about social importance or new rewards. You are supposed to think of social support

an entitlement, not as a chemical you must stimulate with careful choices. Such messages make it hard to expect that your needs will be met. (This is the subject of *How I Escaped from Political Correctness, and You Can Too*.)

The point is not that you *should* care about social importance or new rewards. The point is that you do, and if you deny it, you cut yourself off from the path to good feelings. If you ignore your inner mammal, it has to blast an alarm to get your attention. Your inner mammal does not like being squelched. You can honor it without being a slave to social importance, new rewards, and social support. By listening to it, you can find safe ways to stimulate your happy chemicals. (The subject of *Habits of a Happy Brain*.)

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It's important to accept your inner mammal while you're listening to it. Don't spend the time telling it what it woulda coulda shoulda done. Give it your respect for a whole minute. It is already trained to

squelch itself to please others. Give it a break.

If it tells you that this is a real emergency, move directly to Step 3.

If you ignore your inner mammal, it blasts you with an alarm to get your attention.

If it's not a real emergency, do not judge your inner mammal for over-reacting. Just thank it for the information and move on to Step 2.

2. How to find a healthy diversion for twenty minutes

While your cortisol is surging, you need something to do that will not trigger more. That protects you from a cortisol spiral. You will address the underlying problem once your cortisol has had time to get excreted.

What can you do that does not trigger more cortisol? It can take a bit of experimenting and preparation to find enjoyable activities that don't harm you in the long run. Exercise and meditation are well-known options, but it's important to be prepared with alternatives. These might include: working with your

hands (cooking, crafting, playing music, or gardening); comedic entertainment; reading something uplifting; talking to people who are uplifting; planning something fun like a celebration or trip; games. Develop more than one of these so you always have a way to discharge.

Avoid everything that triggers you. Do not play a game that upsets you. Do not chat with people who add to your anxiety. Do not listen to the news. Stop and switch activities if you notice yourself getting triggered. Ensure yourself of twenty stress-free minutes.

You may think it's impossible to enjoy an activity in twenty-minute segments. But once you practice this regularly, you will appreciate the temporary respite knowing that concrete action will follow. You will even start expecting to enjoy it, which gets your happy chemicals going in advance.

Distraction is sometimes abused, of course. People cling to harmful distractors instead of taking action. You will not abuse distraction because your timer is set, a healthy activity is planned, and you are committed to taking a next step.

After twenty minutes, you are ready to face the challenge of meeting your needs.

3. Define your next step in one minute

Now you will relieve that "do something" feeling by actually doing something. It may seem impossible

to come up with a reliable step in one minute. But if you took one hour or one year, you might still find it hard to settle on a step you had confidence in. That would deprive you of the great relief that comes from taking a step.

You can never predict the results of your step with certainty, so there are always logical arguments to be made for doing nothing. But when you do nothing, you miss out on the good feeling of approaching a reward, and strengthen the circuit that sees you as a powerless victim of circumstances.

When you do nothing, you miss out on the good feeling of approaching a reward, and strengthen the circuit that sees you as a powerless victim.

The victim circuit can be very comfortable because it has short-run rewards. It helps you get the oxytocin of social support, the serotonin of social importance, and the dopamine of anticipated rewards. Thus it can feel threatening to leave that well-developed victim place for untested action. This is why so many people remain there, despite the cortisol. (This is explained in more detail in all my other books.)

To free yourself from this cozy niche, a technique called "chunking" is helpful. Break down your course of action into small chunks. Continue chunking until each step looks small enough for you to take. Define the first chunk precisely and commit to doing it immediately. If you get stalled, your anxiety may come back and you will start over with Step 1. Gradually you will notice that taking a step relieves anxiety, so you will be eager to take steps.

Sometimes you know exactly what step you want to take, and other times you don't. Either way, the clock is ticking and you will define a next step. If you can't do it immediately, write it into your calendar now and commit to it. Obstacles may quickly fill your mind. What is the first step toward overcoming the first obstacle? Do it or write it into your calendar.

What if the step you take is wrong? What if it's dumb and you regret rushing into it? You get to take another step. Your continual steps toward meeting your needs will wire your inner mammal to expect to meet its needs. That is what it takes to feel safe.

If you truly cannot settle on a step you believe in, plan an information-gathering step. "Plan" means an exact time. "Information" means details of actual steps. "Gathering" means interacting with the world rather than just thinking by yourself.

You will meet your needs by constantly taking steps. The next step will always be in your mind and on

your calendar. You will start expecting to meet your needs, and your happy chemicals will flow.

This book has said little about the content of your anxiety. It aimed at building the solution circuit instead of reactivating the problem circuit. By reading this far, you have started to train your brain to focus on your sense of safety instead of on your sense of threat.

When you get frustrated, it helps to appreciate the job your brain is doing. You have inherited the brain of ancestors who survived. This may sound obvious, but it's a miracle when you think about it, because survival rates were low in the past, yet *your* ancestors managed to stay alive and keep their children alive going all the way back. Your brain is designed to focus on survival, and understanding that makes it easier to manage.

<u>Your</u> ancestors managed to survive long enough to have children who survived, going all the way back. It's a miracle when you think about it.

Epilogue
Three circuits I rewired

Here are some of the threat circuits I have replaced with safety circuits. They illustrate the physical patterns beneath the words we attach to anxiety. Though our brains are unique, you will see some common elements.

1. Mind/body connection

I had a habit of holding my breath for most of my life. It was so automatic that I never knew why I was doing it or how to stop. I was so used to ignoring it that I never thought of finding a solution. Then I turned fifty and decided to take better care of my body.

I was lucky to live near an alternative health center that offered a free introductory class in a different therapy every hour. I indulged in many of them and got a deep education in the mind-body connection. The variety helped me find the common core of knowledge while freeing me from pressure to conform to any one method.

I suffered serious injuries when I was young, and presumed that was the caused of my breathing problems. But I found out that shallow breathing is a rather widespread habit. I also learned that breathing involves almost every muscle of the body in an

orchestrated flow. One clenched muscle can affect the whole flow, and restrict your oxygen. It's easy to clench a muscle without being aware of it, especially the muscles in your ribcage. Such constrictions can trigger an alarm, as your body tries to get your attention to fix it. But once you habituate to this constriction, it's hard to figure out where the alarm is coming from.

I hesitate to raise this issue for fear of provoking more anxiety. We cannot expect our bodies to be perfect and it is not easy to change muscle-holding patterns developed from youth. And yet, rewiring those patterns was the best way for me to relieve anxiety.

I am happy to say that I made huge improvements with a wide range of therapies, including osteopathy, the Rosen method, myofascial release, yoga, and many more. None brought me instant relief, but they are all giving me the constant feeling that I am getting more oxygen with less effort.

2. Conflict avoidance

Conflict triggers cortisol in the animal world because you anticipate pain. I was very good at avoiding conflict due to adverse experiences when I was young. But I gradually learned that avoiding conflict creates anxiety too, as you anticipate threats, forfeit rewards, and contract muscles into "body armor." Thus, I could actually feel safer by learning to

risk conflict. The goal is not to increase conflict, of course, but to trust my skill at managing it.

I built this skill this by valuing authenticity. I learned that each moment of authenticity is a reward that releases squelched muscles. Valuing authenticity allowed me to see the benefit of risking conflict instead of just fearing the cost. There was no instant fix, but very slowly, one little risk at a time, I focused more on meeting my needs and less on the risk of conflict.

3. Political correctness

As the years went by, I noticed the anxiety created by political correctness. Everyone around me was agitated about political adversaries and the state of the world. My “good education” taught me that this serves the greater good, but life experience showed me that it does not. I saw how automatic rage at “the system” brings short-run rewards but hurts everyone in the long run.

I decided not to conform to the politically-correct mindset. At first that triggered plenty of anxiety. Where I live, deviants from political correctness are ridiculed, shunned, and excommunicated. I feared being ridiculed and shunned, so I conformed for too long. I even participated in passing this mentality on to my students. But when I had children, I saw how unhealthy this thought habit was for them. I did not want my children trained to blame the system instead of taking responsibility for their lives. I did not want to invest my energy in a belief system that prevails by

excommunicating people. I slowly built the strength to distance from political correctness despite the potential consequences. I trained myself to focus on the good in the world whether or not others do. And I'm glad I did!

We are surrounded by the message that our system is bad, our culture is bad, our leaders are bad, our health is bad, the last century was the worst ever, and the new century is on track to be worse. It's hard to feel positive when negativity is the norm. But the more I knew about the brain, the more I disagreed with the habit of blaming bad feelings on "our society." This habit does more harm than good, however well-intentioned. When you blame your emotions on external forces, you don't build competence over your internal forces. Managing your feelings is more powerful than politicizing them.

As I grappled with this problem, I realized how widespread it is. I eventually wrote two books about it: *The Science of Positivity: Stop Negative Thought Patterns By Changing Your Brain Chemistry*, and *How I Escaped from Political Correctness, and You Can Too*.

Everyone alive is challenged to make sense of their neurochemical ups and downs. Blaming anxiety on political adversaries diverts you from the essential skill of understanding and managing it. That skill is hard enough to learn, but when everyone around you politicizes their anxiety, it's even harder. Of course it's good to seek progress and build social alliances. But when you blame your cortisol on political adversaries,

you lose sight of your power over it. When you are convinced that your disappointments are caused by political adversaries, you overlook the role of your own steps.

When you are convinced that your disappointments are caused by political adversaries, you ignore the role of your own steps.

My own safety circuit

When I spend a minute focusing on what I want, my mind floods with things I can't control. Then I consciously look for things I can control. I find the positive in every situation by saying "I want something good to come out of this." I always find something good when I look. Perhaps a bad event helps me build a skill that I will benefit from later on. Or it helps me understand my old circuits better. Or it teaches me how the world works. Or it develops my unique strengths.

Many of the good things in my life have happened by accident, so when I focus on what I want, I add "I

want a nice surprise." I allow for uncertainty even while being proactive.

For my twenty minutes of distraction, I stretch while watching or listening to comedy. I'm very particular about my comedy since I don't want to be poisoned by someone else's bitterness. I pick uplifting comedy in advance so I am ready to enjoy it when I want to unwind. I stretch by slowly flailing my arms and legs and neck. I don't count anything. I just sway and move in a random way. This was recommended to me by a bodywork expert. At first it sounded odd, but then I realized it was perfect. It is a great break from doing things in a precise way.

When I spend my minute planning my next step, I am completely honest with myself so I don't waste time planning steps I won't follow through on. I can always break it down to small steps that I actually look forward to. Sometimes I take the first step without knowing whether the whole plan is doable, but as the months go by, I realize I have done it!

My view of anxiety relief was curiously shaped by studying Japanese manufacturing in the 1990s. I learned that Japanese auto factories improved quality by stopping the whole production line whenever a defect was found. Engineers rushed in to collect data in order to analyze what went wrong. This made it possible to fix problems at the source instead of making the same mistake over and over. In the short run, this scrutiny of defects is anxiety-provoking. But

in the long run, it's a relief to know that problems will get fixed and everyone is held to the same rules.

This strategy, called "Total Quality Management," became popular worldwide. It is the reason we are surrounded by little cards asking for feedback. It's stressful to know that your work is being judged all the time, but TQM helps solve problems instead of covering them up. The urge to cover up problems is natural in a brain that strives to avoid threats. But a big brain can tolerate short-run threats in order to reduce long-run threats.

Our threat response depends on the lens we look at the world with. I used to see the world through crisis goggles. They felt so natural that I didn't notice them. My education trained me to be "critical." You were considered weak if you looked at the bright side. The word "self-satisfied" was an insult.

After decades of this negativity, I realized that it was an internal habit rather than an external fact. I re-trained myself to focus on the good and if anyone thinks that's weak I don't care. I learned to take off the crisis goggles and see the world without them.

Keep in Touch

Has this book helped you? Please tell me what you did that worked: Loretta@InnerMammalInstitute.org

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Books

- Habits of a Happy Brain: Retrain your brain to boost your serotonin, dopamine, oxytocin and endorphin
- The Science of Positivity: Stop Negative Thought Patterns By Changing Your Brain Chemistry
- I, Mammal: How to Make Peace With the Animal Urge for Social Power
- How I Escaped from Political Correctness, and You Can Too

About the Author

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Her work has been featured on Forbes, NPR, Psychology Today, and a wide range of podcasts. The Inner Mammal Institute offers free resources that help you build power over your mammalian brain chemistry. Dr. Breuning's many books, videos, blogs, and digital resources have helped thousands of people make peace with their inner mammal.

Her previous books include:

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